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Conference Abstract

Global Biodata Resources: Challenges to long-term sustainability of a crucial data infrastructure

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Abstract

Biodata resources under threat

Research in the life sciences is data-driven and critically dependent on data integration and analysis enabled by open-access biodata resources. These resources are crucial to biological, life science, and biomedical research as well as to the commercial biotechnology and pharmaceutical sectors; they have substantial impacts both in fundamental and applied research, and they underpin and amplify the research investments made by funders, primarily through increased research efficiency and reduced duplication of effort. Worldwide life sciences data resources are now a major global research infrastructure that researchers, clinicians, and private sector scientists depend on to support their work. This infrastructure is growing rapidly as funders adopt open access policies that require researchers to archive their data and as technological advances enable generation of higher data volumes and more types of data.

Despite being an established and vitally important infrastructure, biodata resources are primarily funded through fixed-term and often competitive mechanisms by research funding bodies, with funding for many at risk from budget reductions or changes in strategy. The Global Biodata Coalition (GBC) was founded and is driven by global research funding bodies to aid coordination of support for the life sciences data infrastructure among funders globally and to promote the development of longer-term and more stable funding solutions for crucial resources.

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The Global Biodata Coalition

The GBC works with funders to understand the biodata resource infrastructure, to engage with resource managers and researchers, and to move towards more internationally coordinated, sustainable and more streamlined mechanisms to support biodata resources. Further interests encompass the processes and consequences of open biodata, in particular credit-giving for data contributions and processing; inclusion of data scientists from all parts of the world; and opportunities of interdisciplinarity.

GBC activities span engagement with stakeholders, such as funders, biodata resource managers and users; exploration and definition of the funding and biodata resource landscape, and the mobilisation of change that improves sustainability and coordination of biodata resources.

Understanding the global biodata infrastructure

Collectively, life science data resources around the world form a vast, distributed, and interconnected infrastructure, arguably forming the largest infrastructure in biology. These resources are critical for ensuring the reproducibility and integrity of the entire life sciences research enterprise, but the infrastructure as a whole is poorly described. GBC is currently undertaking two activities to understand the infrastructure, and thereby provide context for funders in supporting this infrastructure over time: an inventory of all global biodata resources globally, and identification of global core biodata resources, which are those resources within the infrastructure that are, as a collection, most crucial for life sciences and biological research worldwide.

Open biodata resources archive and provide analysis of basic research data that describes and documents biodiversity, taxonomy, and biogeography. Loss or diminution of these key resources would have a detrimental impact on biodiversity research.

In this talk we will describe the Global Biodata Coalition and the challenges of sustaining the global infrastructure of linked biodata resources, focusing in particular on the role of the globally accessible open access resources as the foundation for global and regional research on biodiversity.

Keywords

data resources, biodiversity, open data, databases, life sciences, funding

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